

Figure 1

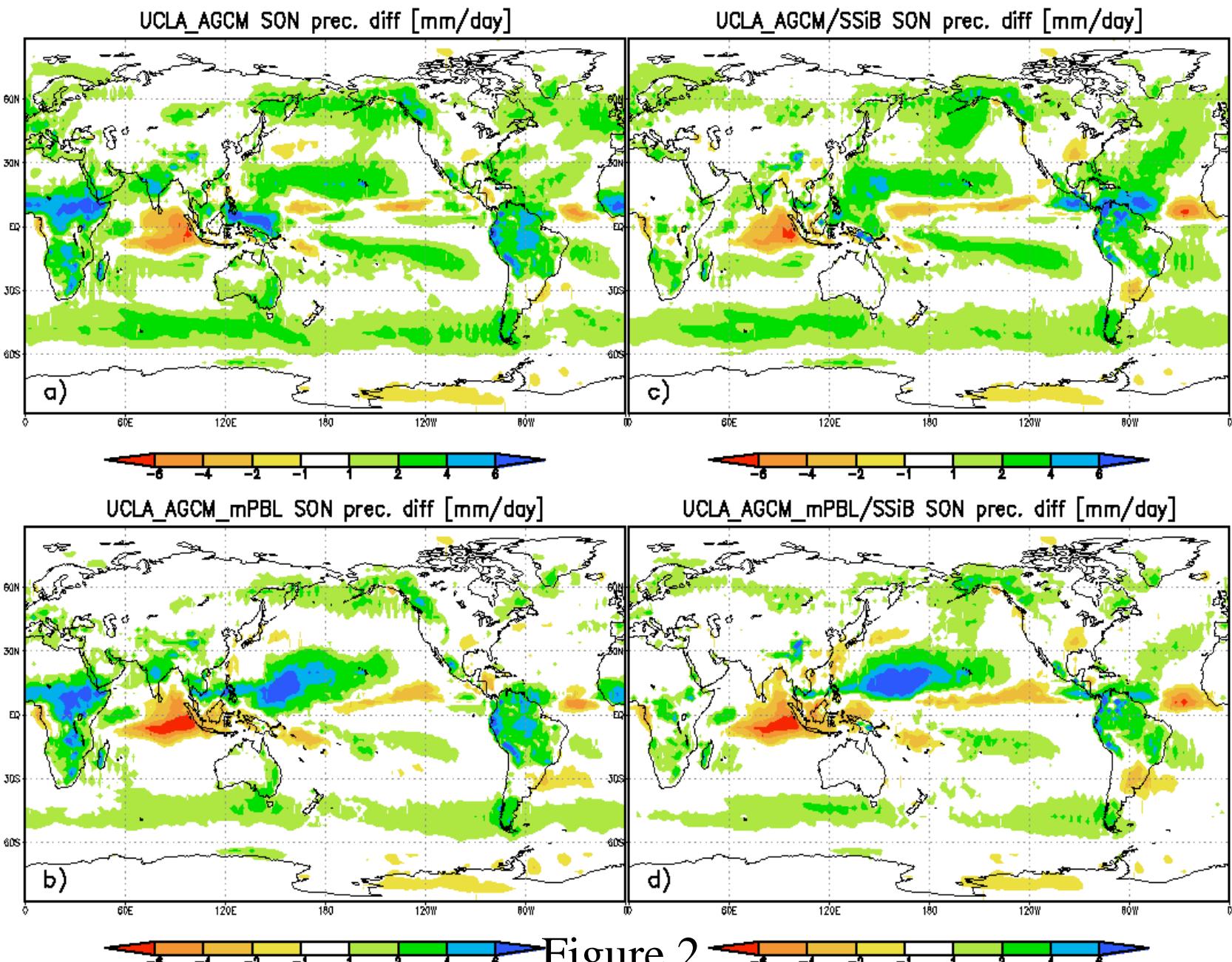
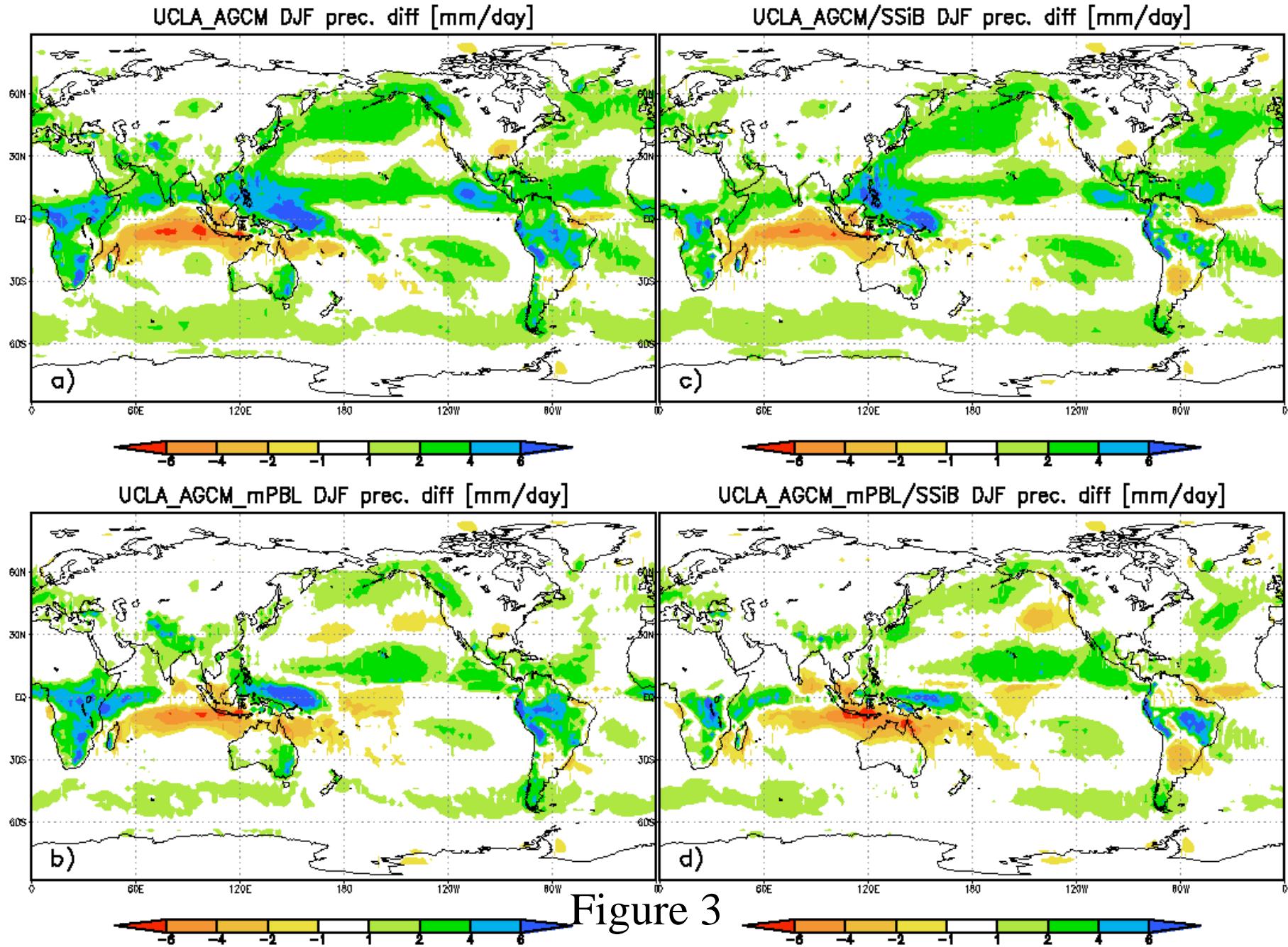


Figure 2



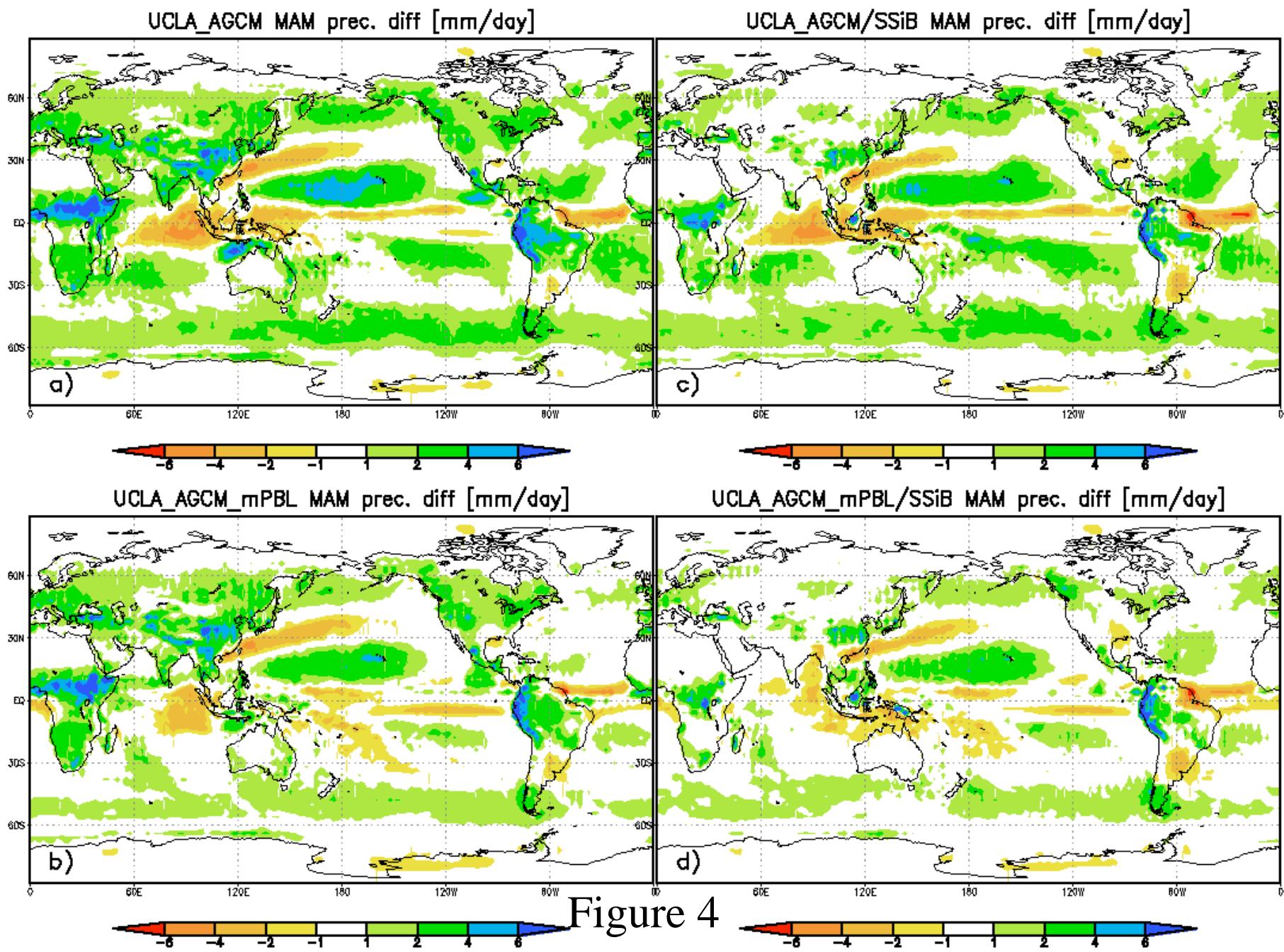


Figure 4

Meridional moisture flux interannual difference [1]

$0^{-2} \text{ kg m s}^{-1} \text{ kg}^{-1}$

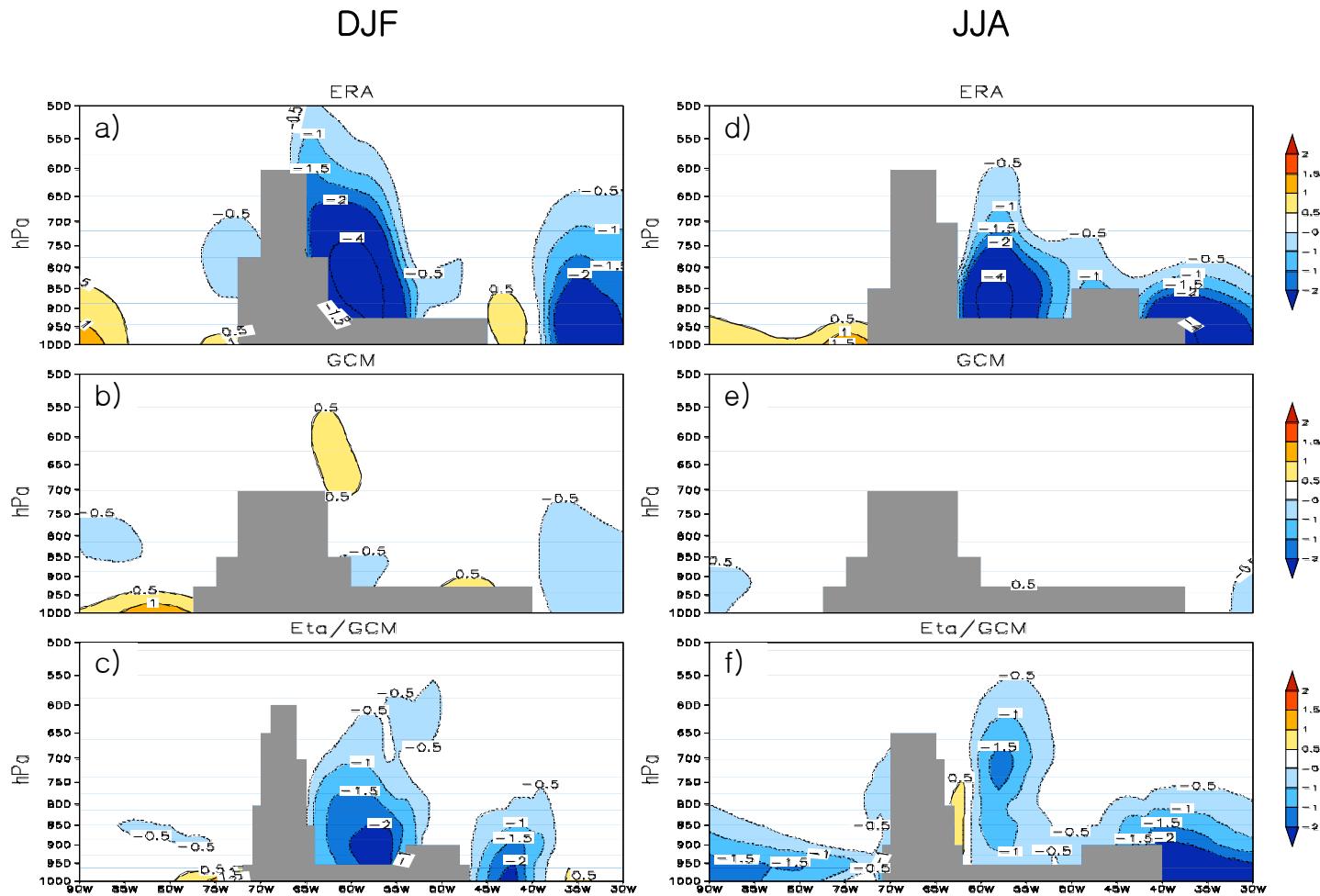


Fig. 5: Pressure-longitude cross sections of meridional moisture flux difference between DJF97 and DJF88 along 25°S for a) ERA, b) GCM, and c) Eta/GCM; and between JJA97 and JJA88 along 20°S for d) ERA, e) GCM, and f) Eta/GCM . Unit: $10^{-2} \text{ kg m s}^{-1} \text{ kg}^{-1}$.

Precipitation interannual difference [mm/day]

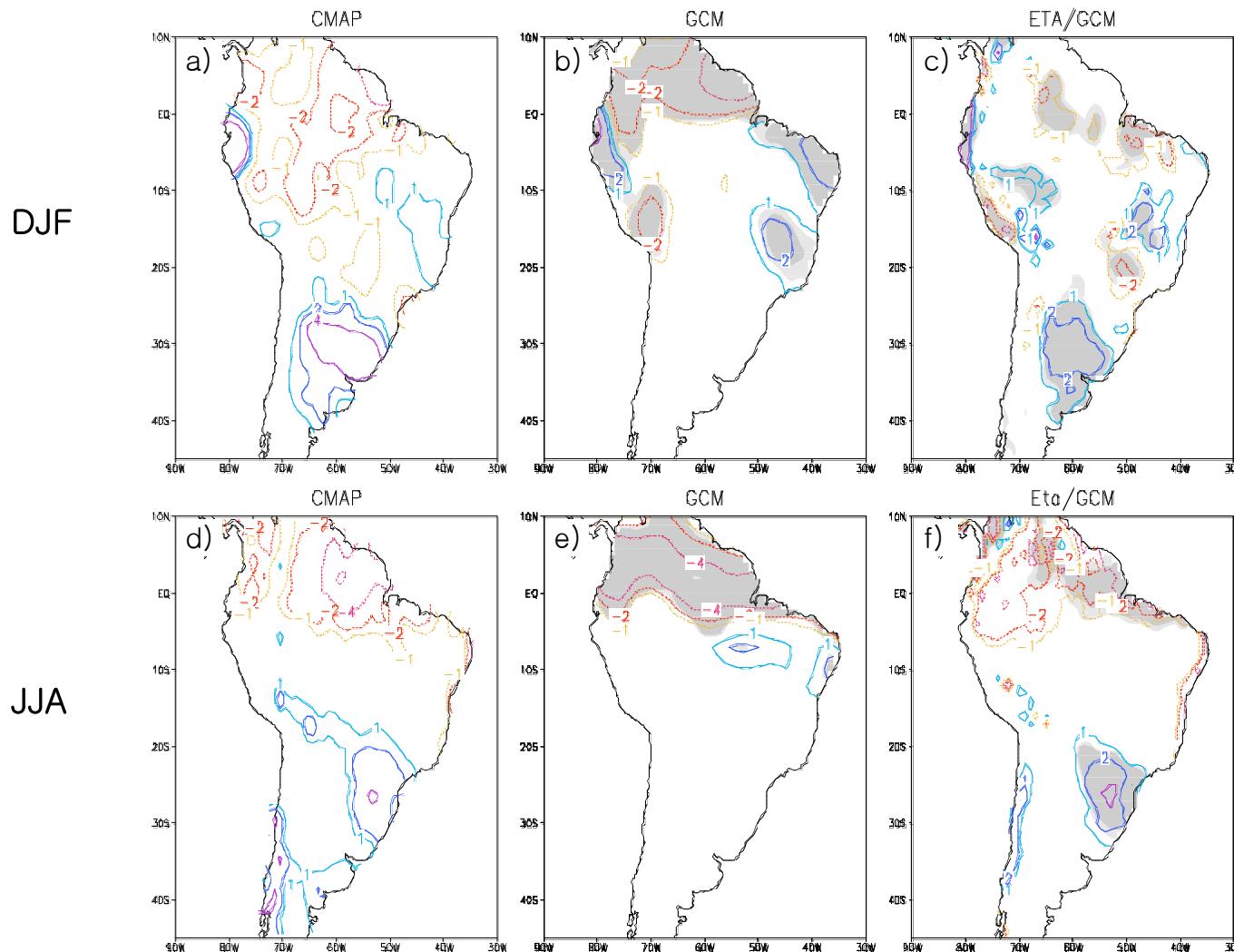


Fig. 6: Average precipitation difference between DJF97 and DJF88 for a) CMAP observation, b) GCM, and c) Eta/GCM; and between JJA97 and JJA88 for d) CMAP observation, e) GCM, and f) Eta/GCM. The light and dark shaded areas indicate differences consistent over the 90% and 95% confidence levels. Unit: mm day^{-1} .

Table 1

Precipitation simulation bias [mm/day]						
Global precip diff over land	DJF	MAM	JJA	SON	Ann	rel. err. (%) [*]
UCLA_AGCM	1.16	1.64	1.73	1.39	1.48	80
UCLA_AGCM_mPBL	1.01	1.45	1.56	1.18	1.30	70
UCLA_AGCM / SSiB1	0.66	0.75	0.60	0.61	0.66	35
UCLA_AGCM_mPBL / SSiB1	0.47	0.57	0.50	0.50	0.51	28
UCLA_AGCM_mPBL / SSiB2	0.45	0.52	0.43	0.55	0.49	26
Global precip diff South America	DJF	MAM	JJA	SON	Ann	
UCLA_AGCM	2.72	2.31	2.07	2.65	2.44	63
UCLA_AGCM_mPBL	2.56	1.76	1.33	2.44	2.02	52
UCLA_AGCM / SSiB1	1.29	1.15	1.61	1.94	1.50	38
UCLA_AGCM_mPBL / SSiB1	1.12	0.99	1.38	1.73	1.30	33
UCLA_AGCM_mPBL / SSiB2	1.10	0.93	1.07	1.66	1.19	31

*relative error: $(\text{simulation}-\text{observation})/\text{observation}$